

PHENIX WEEKLY PLANNING

TECHNICAL SUPPORT ZONE



3/8/2012
Don Lynch

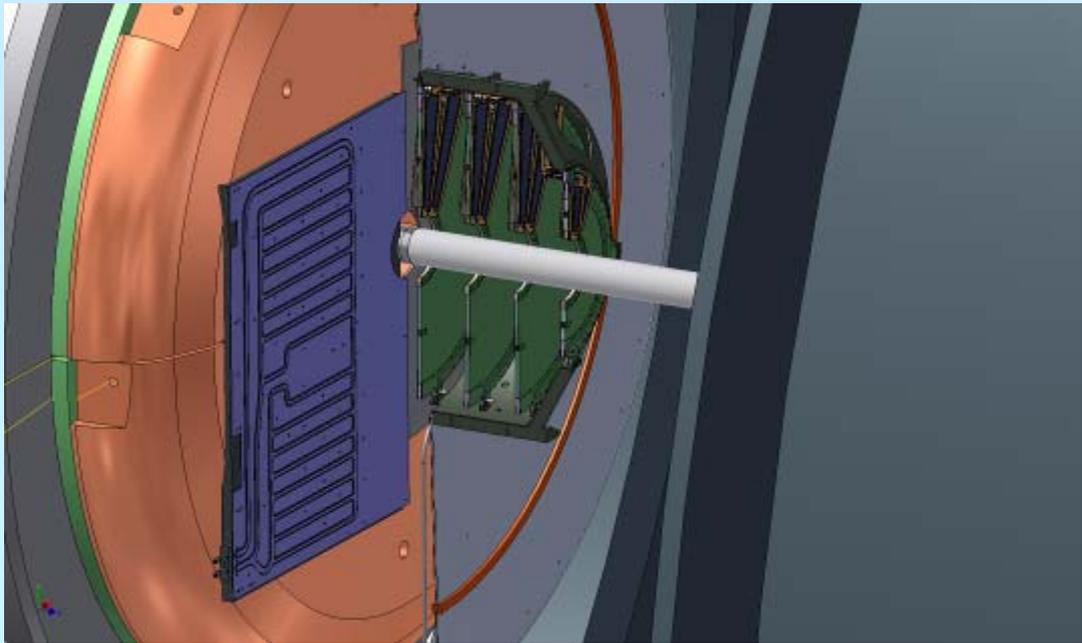
This Week

- Run run run end of 200 GeV run
- MPC North rack assembly
- FVTX/VTX troubleshooting/meeting
- No Scheduled maintenance Day
- Planning and preparation for 2012 shutdown
- sPHENIX design and analyses

Next Week

- Change over from 200 GeV to 500 GeV run
- Maintenance Access day: Wed 3/14
 - MPC North rack assembly
 - RPC1 auxiliary cooling
 - FVTX/VTX troubleshooting and repair
 - Other
- Planning and preparation for 2012 shutdown
- sPHENIX design and analyses

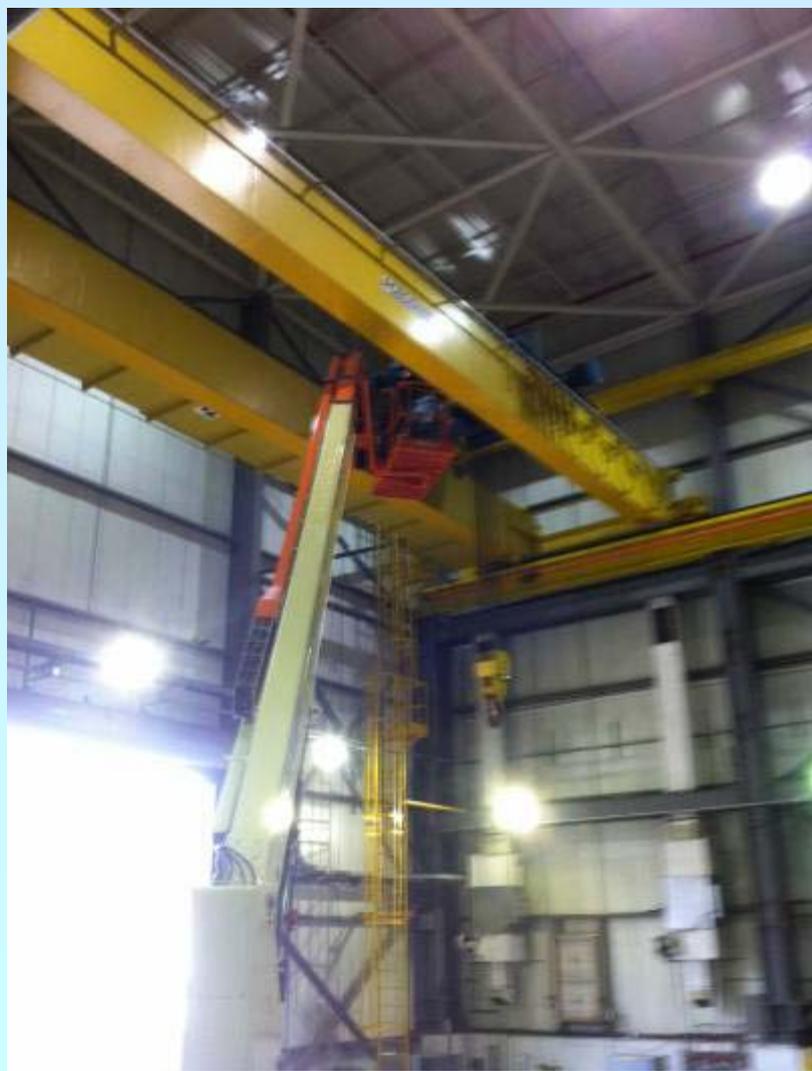
TECHNICAL SUPPORT



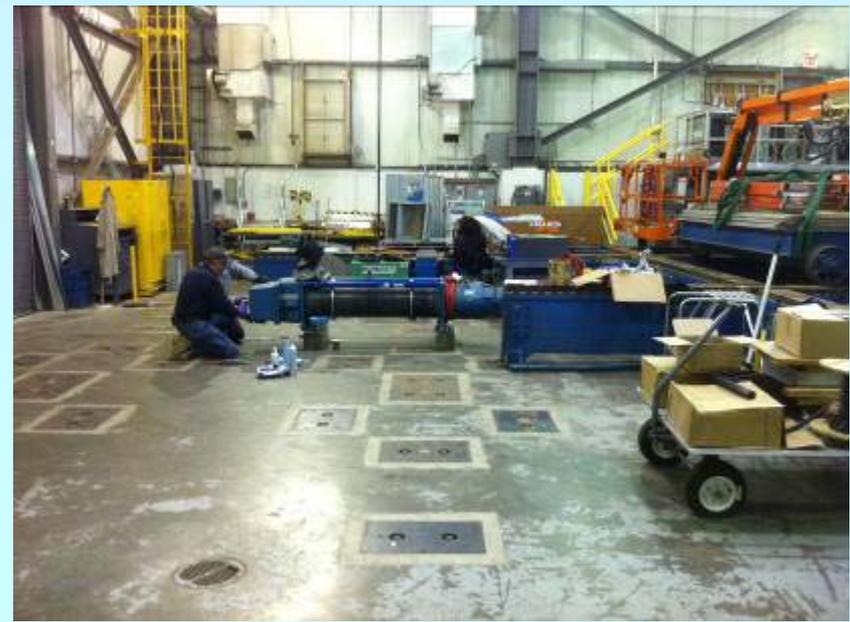
FVTX/VTX Troubleshooting:

- 1: work permit procedure for warm-up/ cool-down
- 2: Change flow configuration: (a) FVTX disks 1 to 4 parallel changed to 2 to 2 Parallel (b) FVTX Bigwheel changed from 10 deg supply to 0 deg supply
- 3: Troubleshooting to find and fix Novec leak
- 4: Thermal/bias problem troubleshooting.
- 5: Other

TECHNICAL SUPPORT



AH Crane variable speed drive and wireless remote upgrade ??



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Rough Schedule:

Prep for shutdown	2/1-6/15/2011
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
Run 12 Ends	6/15/2012
Shutdown Standard Tasks	6/15-7/13/2012
• Open wall, disassemble wall, Remove MuID Collars,	
• Move EC to AH, etc.	
Disassemble VTX/FVTX services	7/2-7/20/2012
Remove VTX/FVTX and transport to Chemistry Lab	7/20/2012
Remove MMS & MMN vertical East lampshades	7/23-7/27/2012
MuTr South Station 1 work	
Install access (Sta. 1work platforms)	7/23-7/27/2012
Disconnect Cables, hoses etc, ID/label all	7/30-8/3/2012
Remove FEE plates and chambers	8/6-8/10/2012
Station 2 Terminators and manifold upgrade through access opened by station 1 removal	8/13/-8/31/2012

Looking Ahead to the 2012 Shutdown (Continued)

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MuTr South Station 1 work (Cont'd)

Clean/install new MuTr Sta. 1 chamber parts and upgrades
(concurrent At RPC Factory)

Re-install chambers and FEE plates

Re-cable, re-hose and test

Repair upgrade, test, reinstall VTX/FVTX

Station 3 North and South (upper half)

re-capacitation and air manifold upgrades

Summer Sunday (RHIC)

Substation breaker upgrade/test (CAD)

AH utility power distribution upgrade

RPC stations 1 and 3, north and south maintenance

Other detector maintenance as required

Infrastructure maintenance as required

TBD prototype tasks

pre-run commissioning and prep for run 13

Prep for EC roll in

Roll in EC

Prep IR for run

Pink/Blue/White sheets

Start run 13

8/13/-8/31/2012

9/4-9/7/2012

9/10-9/28/2012

7/23-9/17/2012

7/23-9/30/2012

8/5/12

TBD

TBD

As required

As required

As required

As required

10/1-11/30/2012

11/5-11/9/2012

11/12/2012

11/12-10/17/2010

10/17-11/30/201

12/3/2012

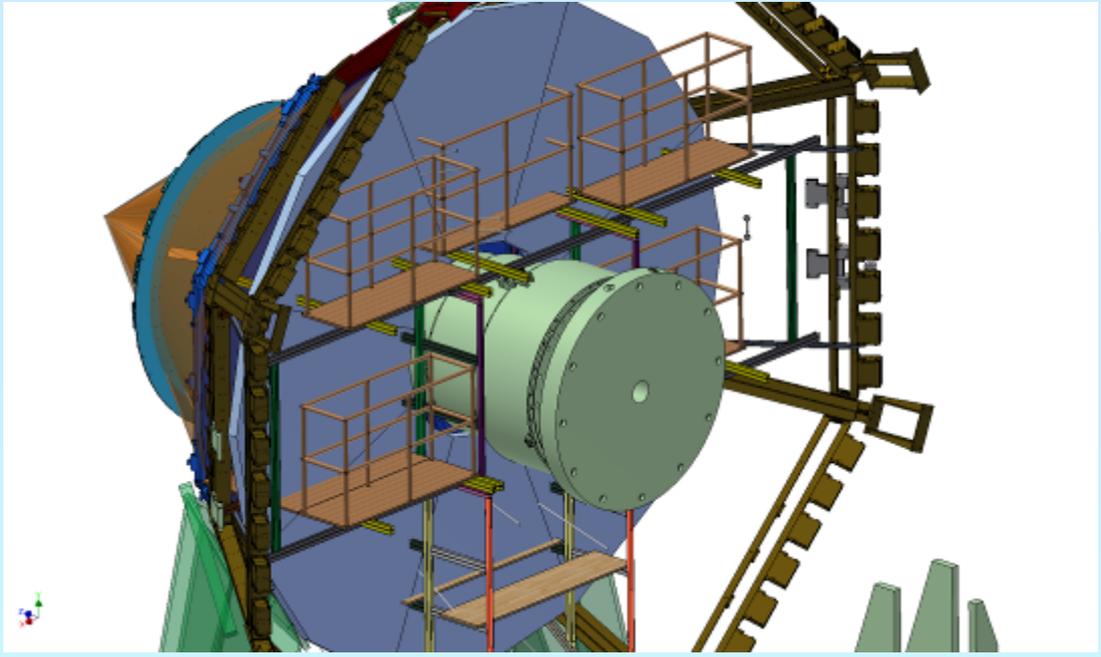


New Electrical Work for 2012 Shutdown, not yet scheduled

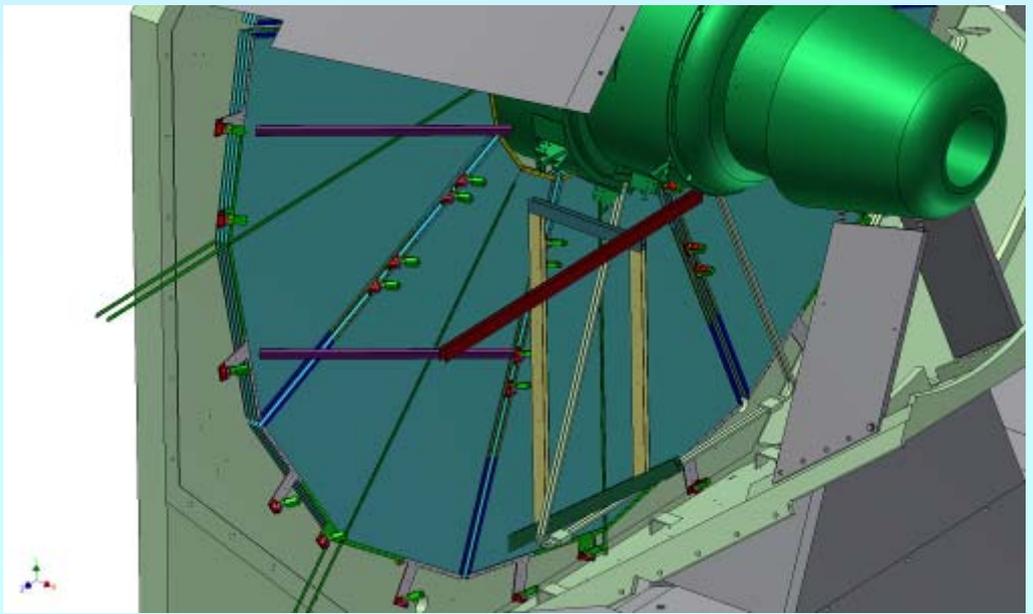
1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.
2. Add the Assembly Hall Crane lockout/contactors/indicator light key switch circuit - similar to IR Crane.
3. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
4. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
5. Work with Martin Purske on new computer rack replacements/additions for upcoming Run 13. He always has last minute Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work.

Additional Work for 2012 Shutdown, not yet scheduled

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6. Replaced aging magnet hoses
7. identify obsolete services passing through sill and remove them.
8. Revisit cover for services coming from IR through sill.
9. Plan for stripping out TEC electronics and services to free up TEC racks.
10. Add light & 2 switch controlled outlets below chiller platform in AH
11. Add limit switch and improved spooling control for window washer cable.
12. Add dusk to dawn light by gas mixing house and R134A shed



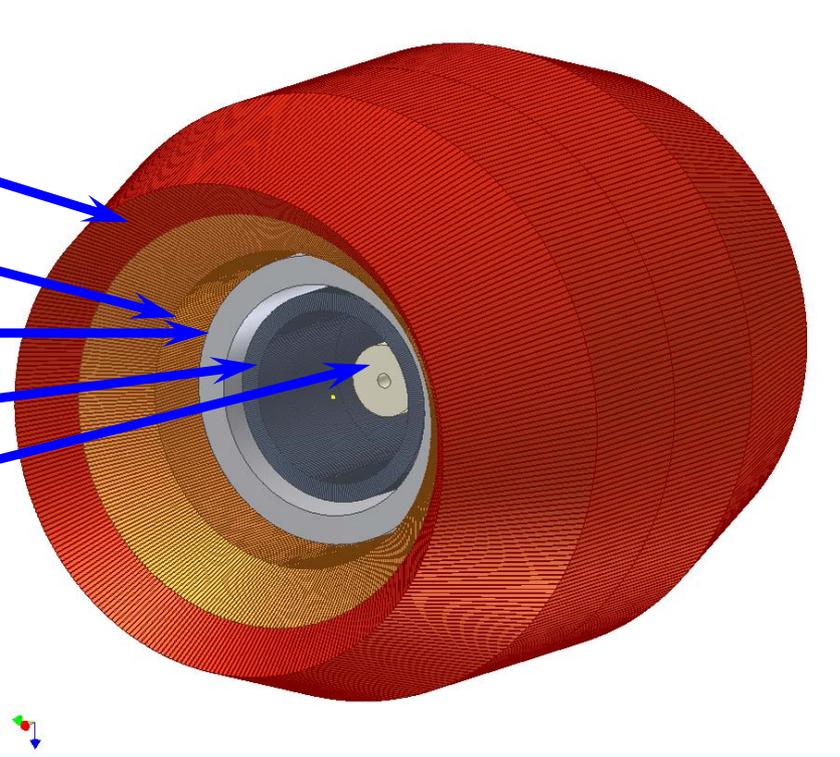
North & South internal work platforms for next summer's shutdown



sPHENIX Upgrades

PHENIX engineering and design are providing support for overall structural and spacial design and modeling, cost estimation and prototype design/fabrication

- Outer Hadronic Calorimeter
- Inner Hadronic Calorimeter
- Superconducting Solenoid
- EMCalorimeter
- VTX3.0

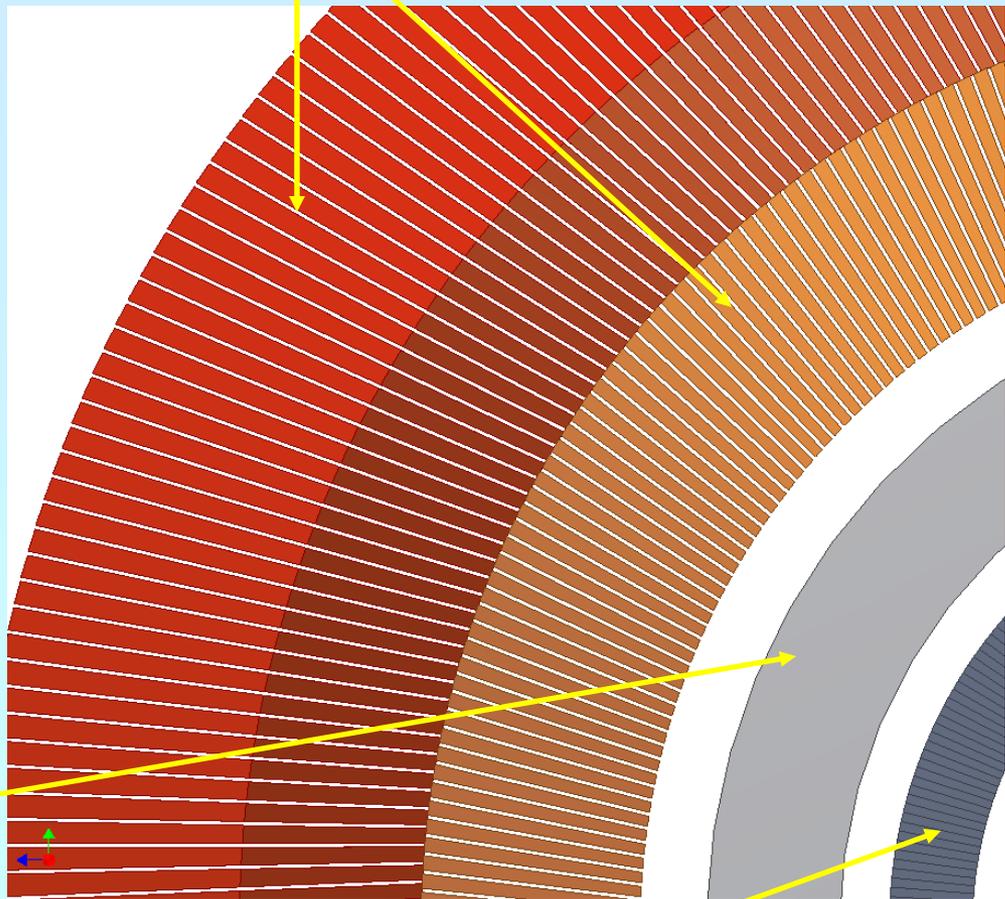


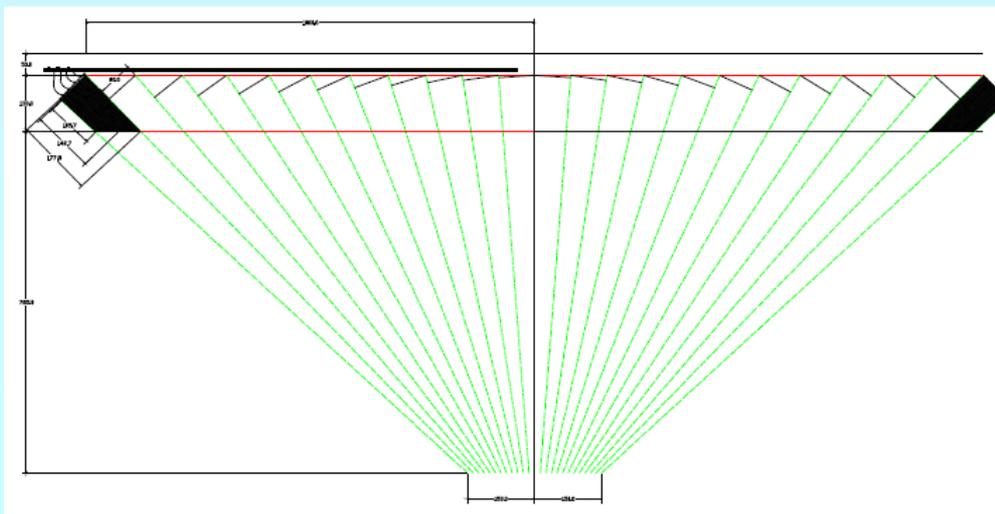
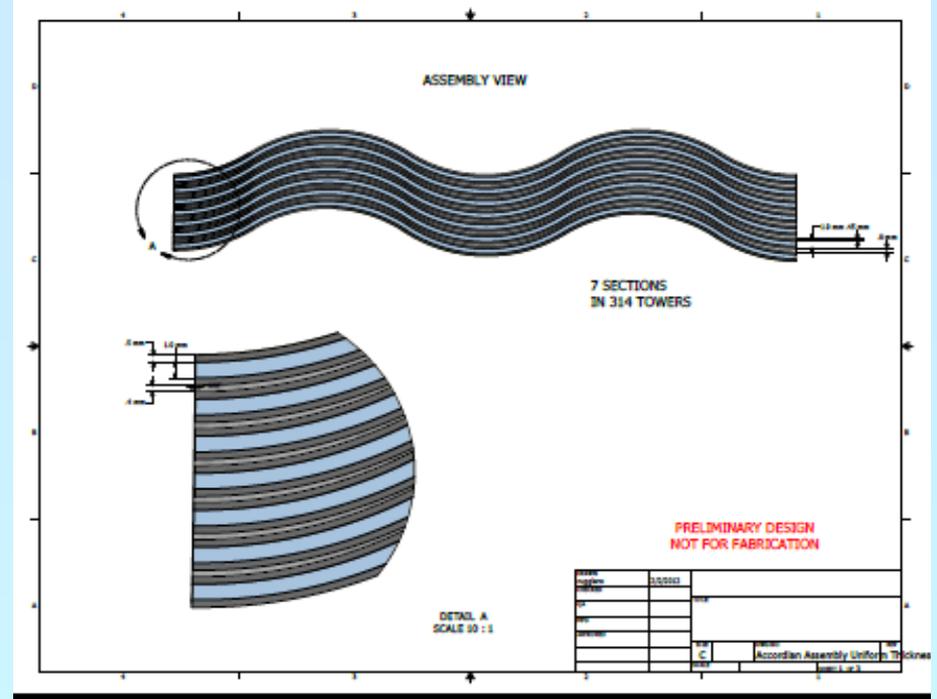
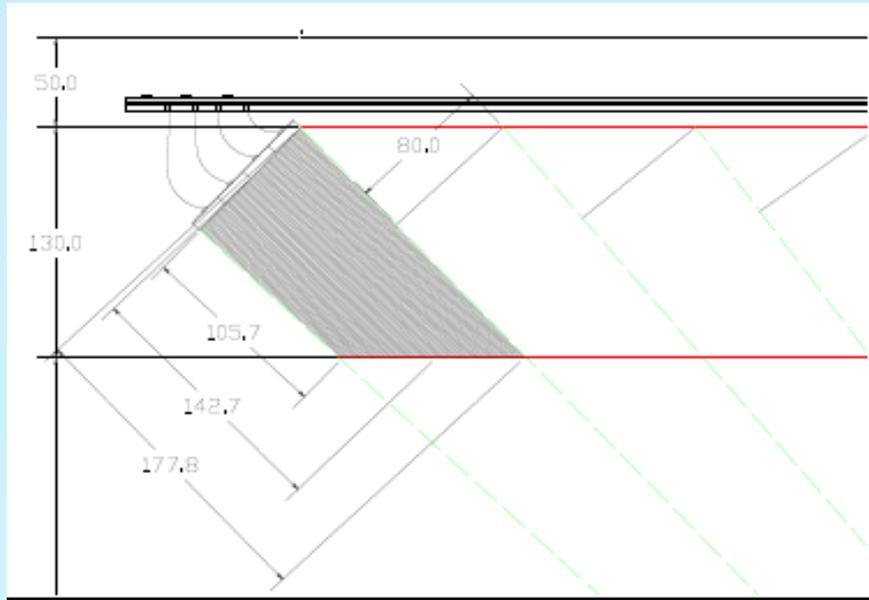
Inner and outer Hadronic Calorimeters
320 segments each, steel and scintillator
1 meter total thickness, ~4.5 meters long

VTX 3.0 vertex detector
(upgraded from present VTX)
[not in picture]

Superconducting solenoid
2 Tesla Magnet and cryostat
.80 m inner radius, .20 m th

ElectroMagnetic Calorimeter
314 segments, Tungsten
and scintillator 0.125 m th
~2 m long

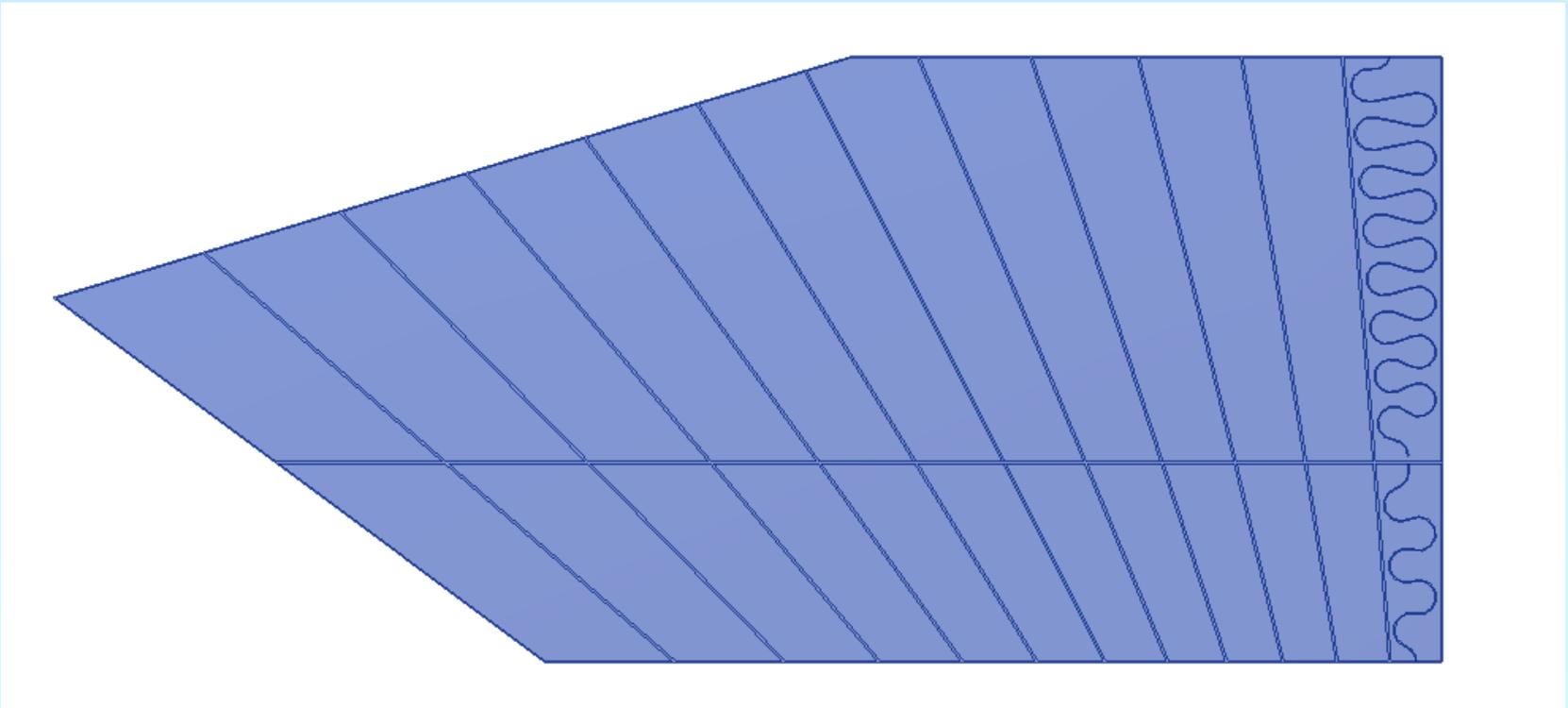




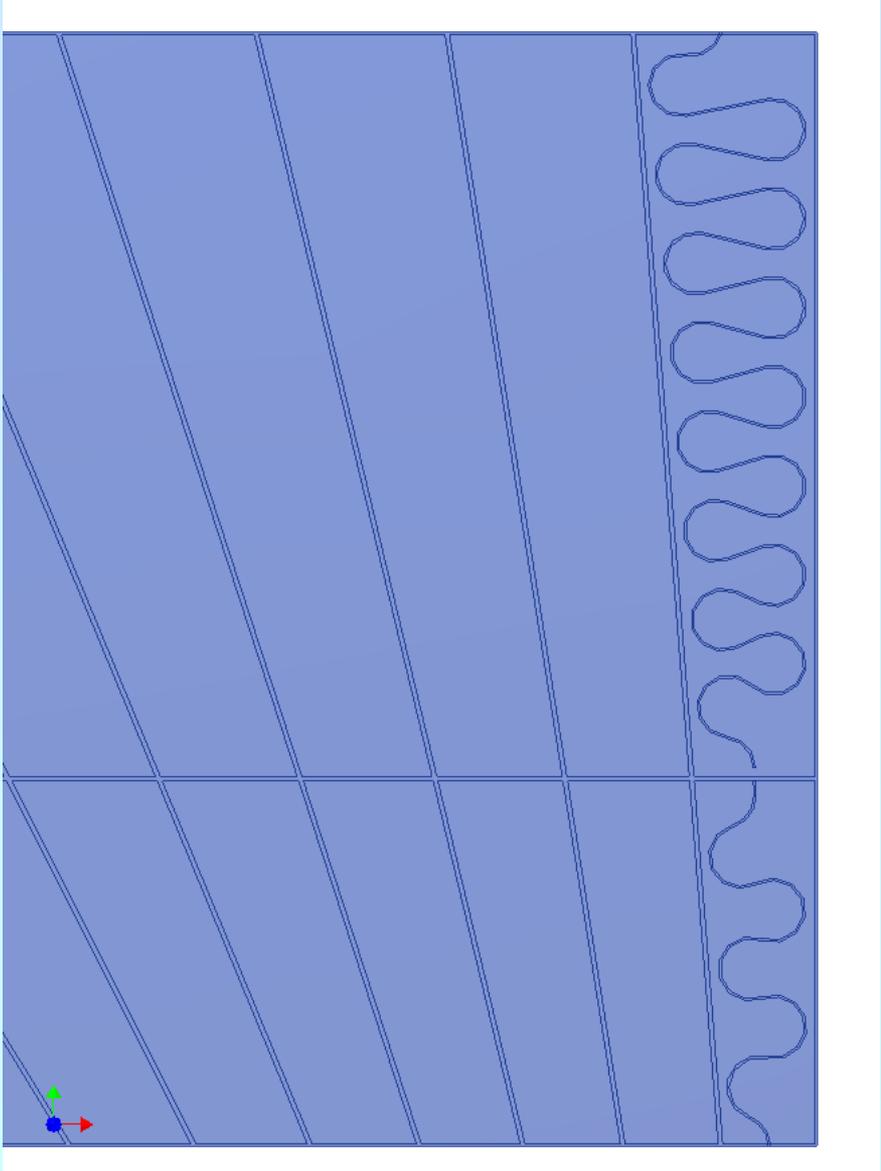
Electromagnetic calorimeter segments using "accordion" shaped scintillators and tungsten plates to optimize detector sampling

Inner and outer HCal scintillator Segments from mid plane out
12 inner and 12 outer with imbedded serpentine optic fiber

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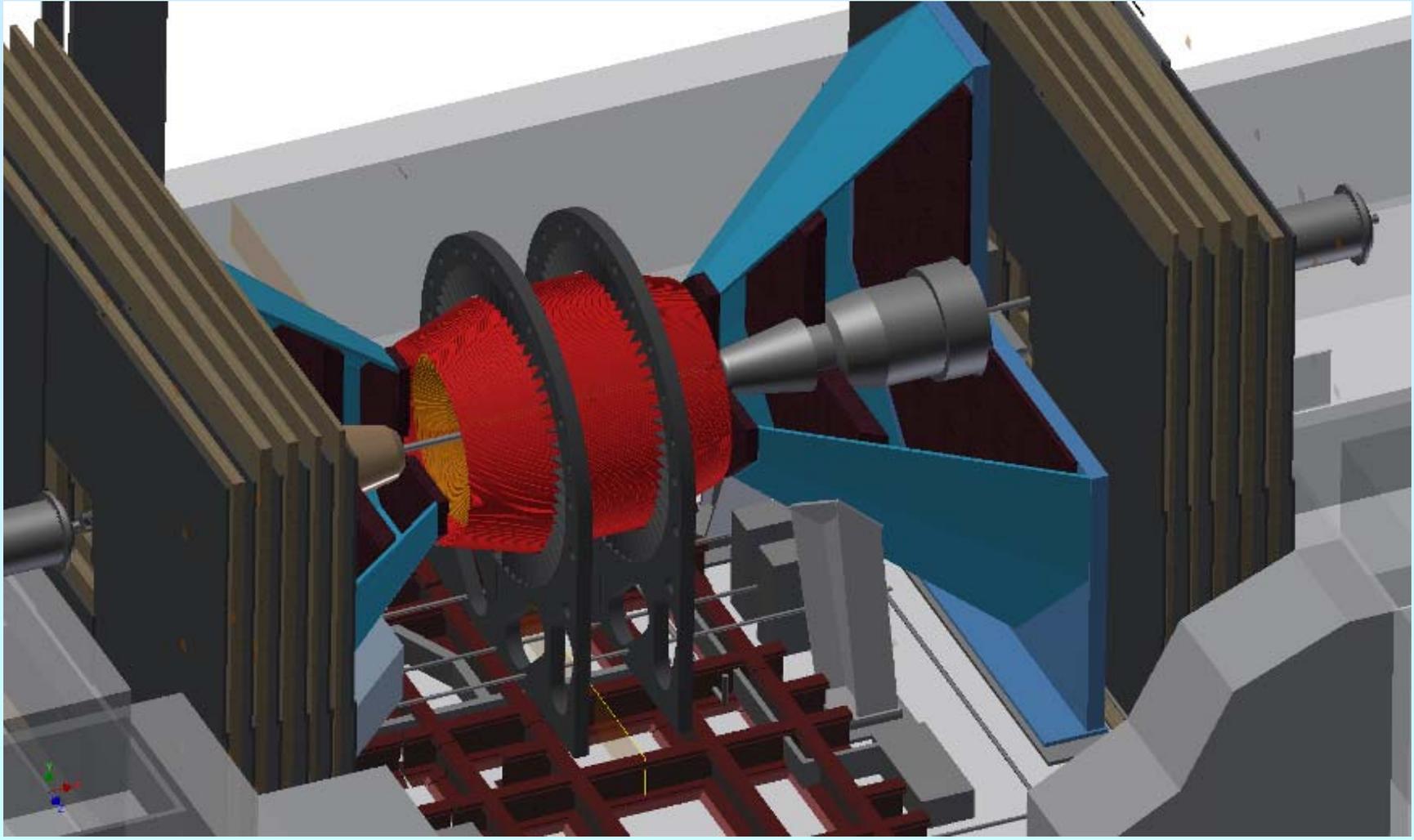


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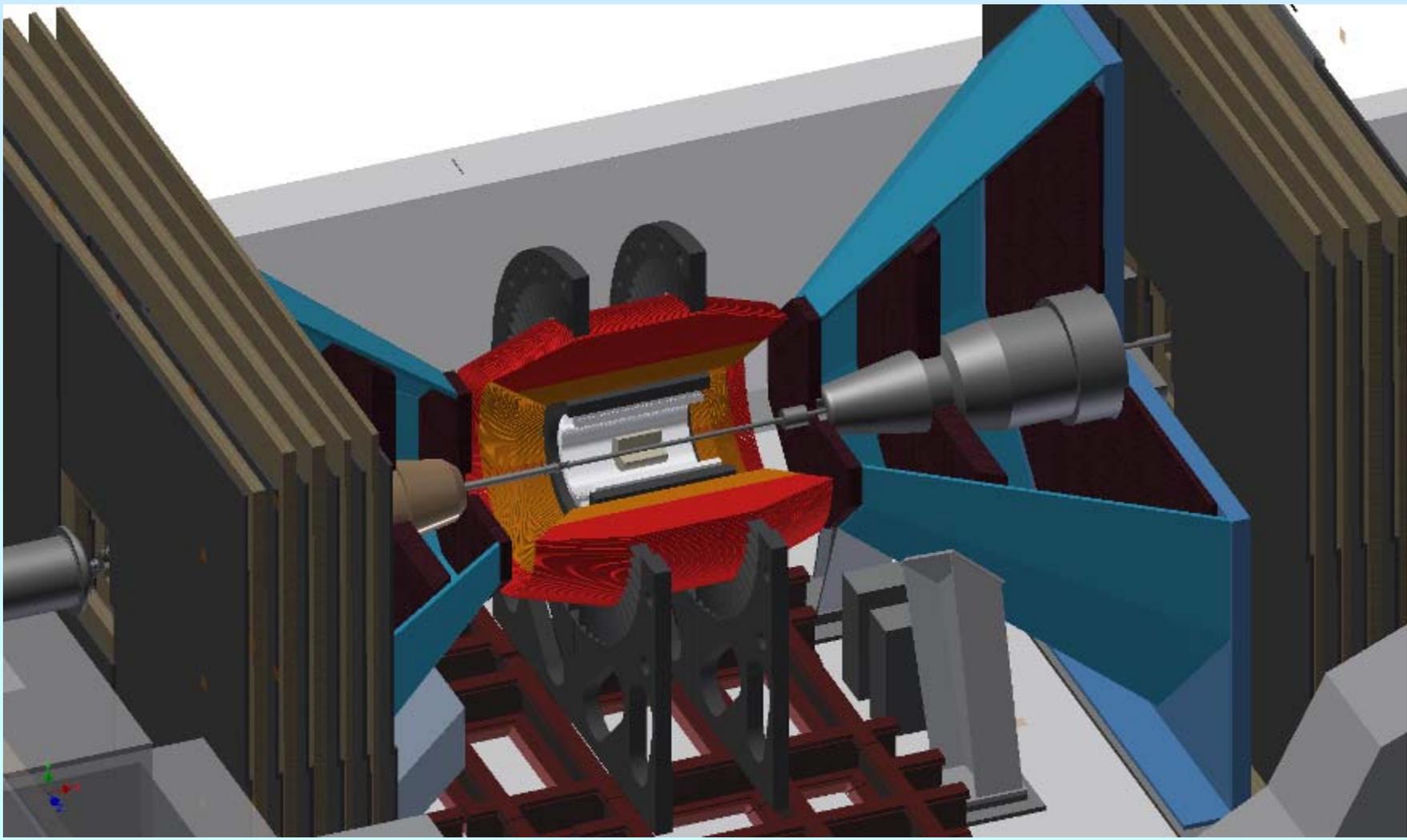
Typical Optic Fiber serpentine pattern on 1 scintillator section
Opposing pattern on opposite side

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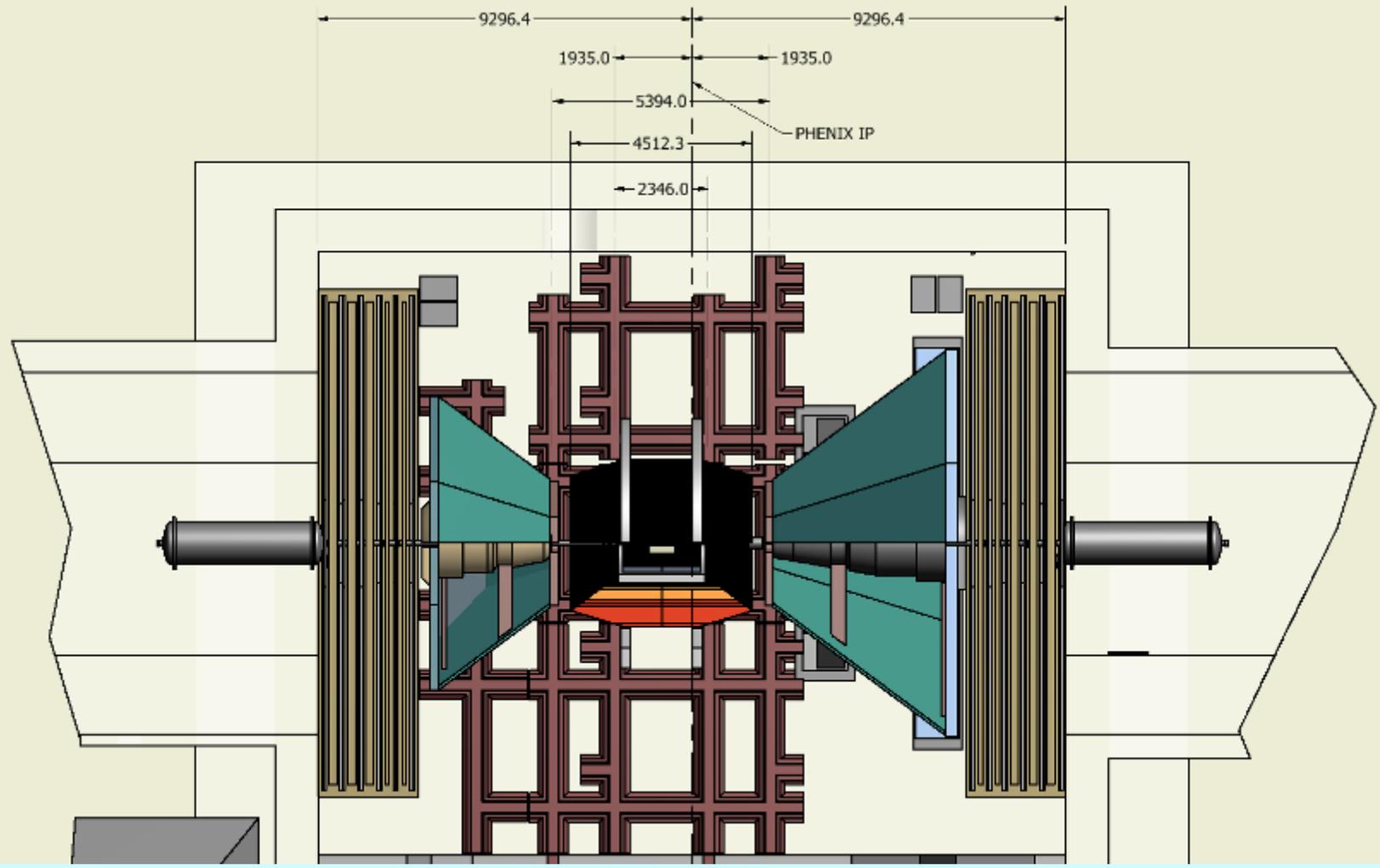


sPHENIX SC magnet, Hcal, EMCal and VTX3.0 in PHENIX IR with MMN, MMS, MuID in place, EC, WC and CM removed. No support structure or services considered yet

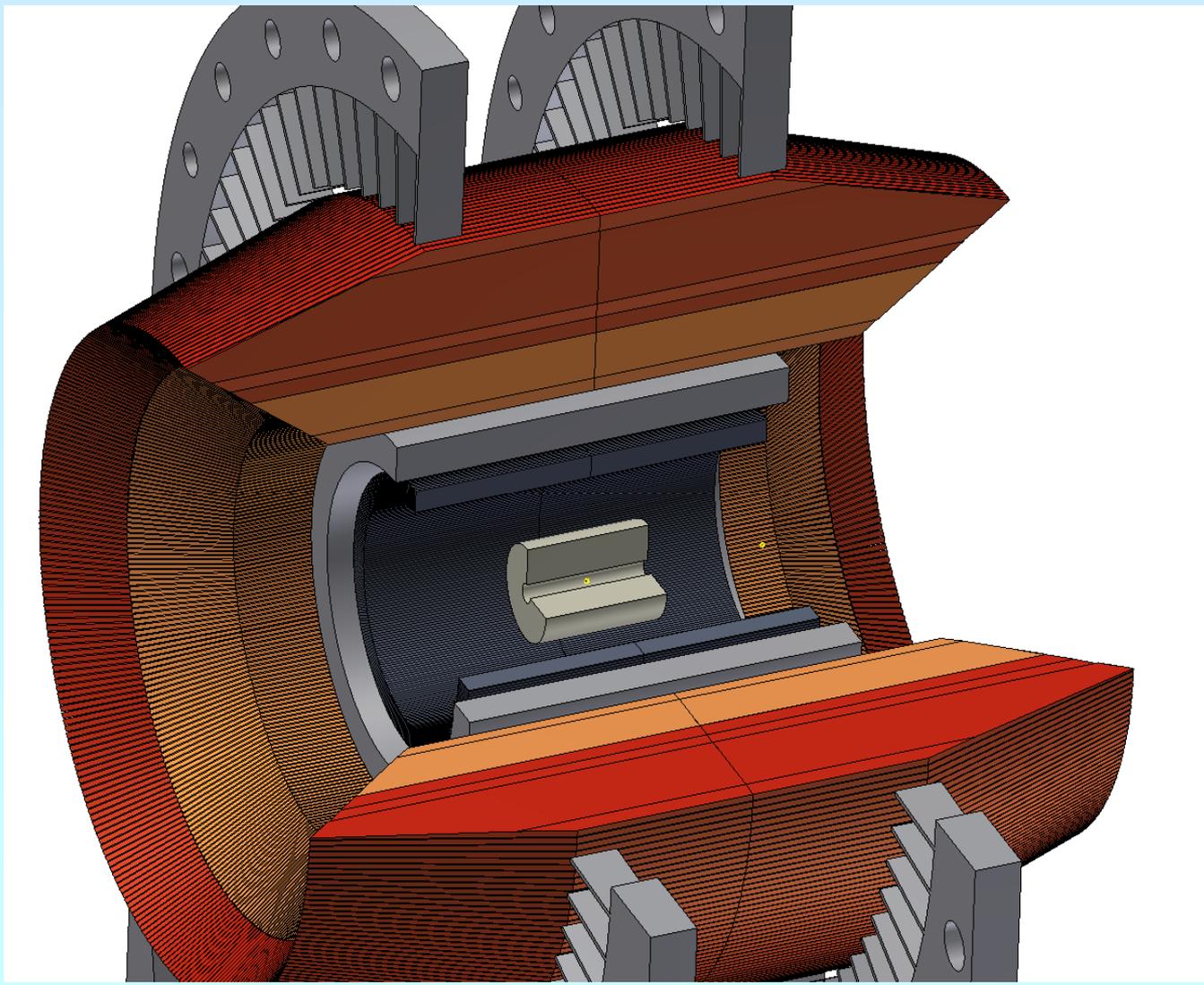
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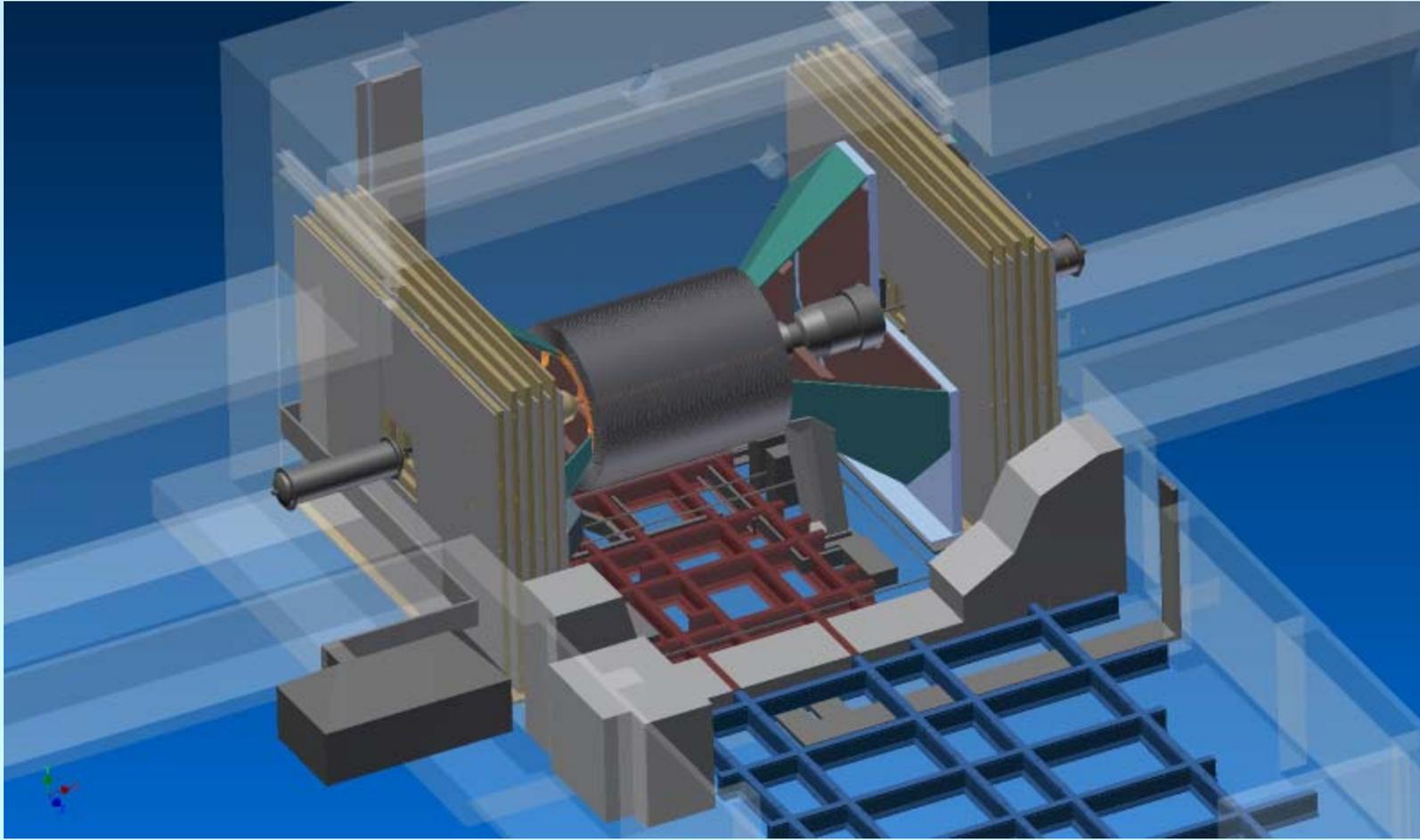
TECHNICAL SUPPORT



TECHNICAL SUPPORT ZONE



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Line Connection

1. Configuration Management - we are reviewing our Config. Management policies and will develop a controlled procedure to assure that we are within Lab guidelines. Most important areas are Gas systems, Electrical and safety systems, experimental structures and equipment and Infrastructure.

2. Lessons Learned at CFN:

One must ensure that compatibility of water hose fittings is appropriate for the application. Similar (almost equivalent) fittings can lead to failure.

Discussion of Activities:

Recently at the CFN there was a failure of a water fitting connection, which led to water flooding a lab where there was a potential for damaging some expensive equipment. The cooling lines were fed from the central chilled water system and therefore had an infinite supply of water. Fortunately, the failure of the water cooling line connection was caught fairly early in the process of leaking and shut off, which limited the extent of the damage.

Analysis:

Upon investigation, it was determined that the tubing used had a thinner wall thickness than what was intended for the fitting design. At first glance, the tubing and fitting might look correct but if one were to pull on the tubing it would slip out of the fitting.

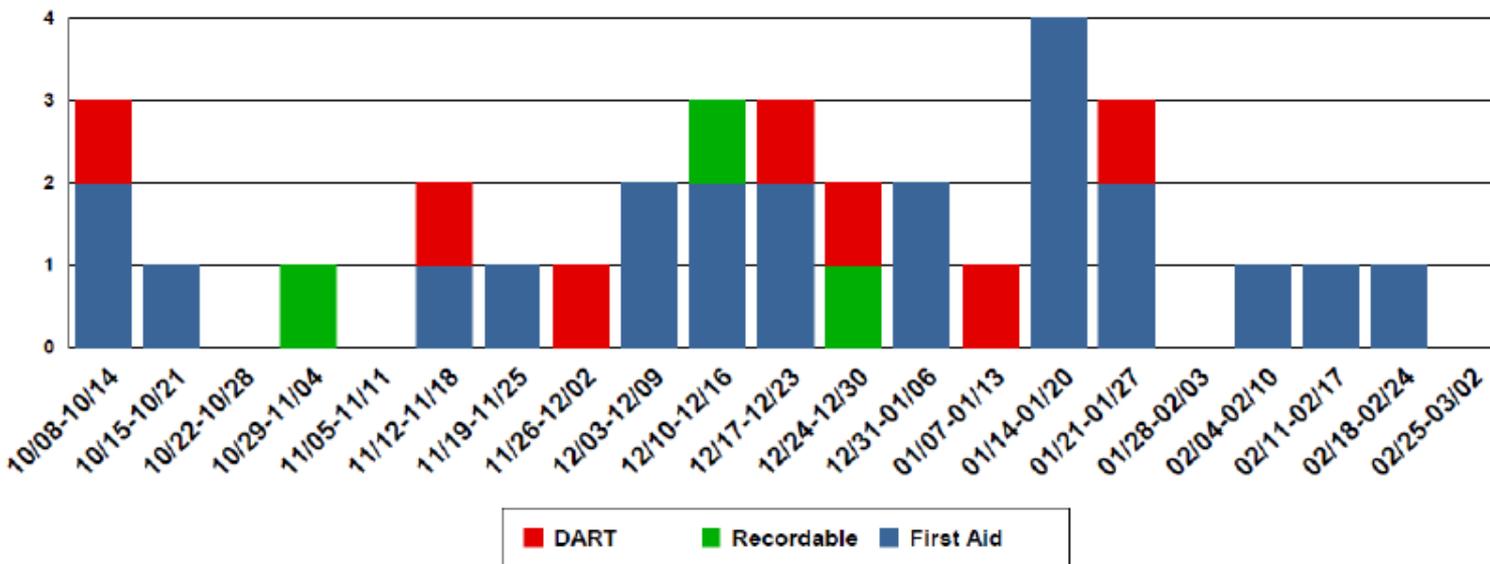
These lines were made of 3/8 inch nylon tubing with poly-tite fitting. The lines were in use for over one year prior to failure. The ferrule of the tubing fitting was designed for a specific diameter and wall thickness. In this case there was a mismatch of poly-tubing and fittings which eventually failed.

Recommended Actions:

The CFN has adopted a new policy to standardize only select combinations of tubing and fittings. Other types of hose, tubing, and/or fittings not listed are not allowed for use without prior evaluation. Additional hoses, plastic tubing, and/or fittings may be added to this list periodically.



Injuries Per Week As of 3/2/2012



Injury Status:

FY12 YTD: DART – 8, TRC – 12, First Aid – 25
 FY11: DART – 27, TRC – 42, First Aid – 45
 FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/Occlnj/BNLInjuries.aspx>

Recent Injuries

2/27/12	Info Only	A visitor sneezed while walking past an instrument and received an abrasion from bumping into the instrument. At the OMC, first aid was given.
2/27/12	Info Only	An employee reported aggravation of old back problems recurring at home. This has been further aggravated at work. This is not a new injury. It was reported on 2/27/12 to the WC administrator and to the OMC.
2/7/12	First Aid	An employee was injured after walking into an immovable object. At the OMC, first aid was given.

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Recent Events		
2/28/12	SC-2	<p>A determination was made on February 28, 2012 to issue an "R" recurring occurrence report based on frequency and similarity of the following ORPS and non-ORPS events occurring over the last 12 months, related to work planning:</p> <ul style="list-style-type: none">• SC-BHSO-BNL-BNL-2011-0014, Heavy Equipment Mechanic Sustains Electric Shock from Abandoned Live Circuit (SC-2)• SC-BHSO-BNL-BNL-2011-0020, Inadequate LO/TO on Exhaust Fan in Apartment Area (SC-3)• SC-BHSO-BNL-BNL-2011-0031, Unintended Contact with Energized Conductor (screw through floor of B-480) (SC-3)• SC-BHSO-BNL-BNL-2011-0034, Electrical Worker Sustains Electrical Shock from Electrical Panel (SC-2)• Event 1268, Spurious B-912 Evacuation Alarm Caused by Cutting 12-24 V Legacy Wire (SC-BNL) <p>Each of the above reports involved personnel being exposed, or having the potential to be exposed, to uncontrolled electrical energy while working at BNL. (Event Link)</p>
2/24/12	SC-BNL	<p>At approximately 3:00 pm on Friday, February 24, 2012, it was discovered that a NSLS employee had inappropriately operated a crane that had been taken out of service and tagged with a yellow caution equipment safety tag. Interviews conducted with the worker subsequent to the initial categorization determined that a number of tags and notices hindered the worker's ability to identify the yellow caution tag until after the crane was operated, at which time the worker alerted the appropriate personnel. (Event Link)</p>

Where To Find PHENIX Engineering Info

March 8th is

- A. Be Nasty Day
- B. International Working Women's Day
- C. Popcorn Lovers' Day

Next week is a big one: Worship of Tools Day (3/11), Girl Scouts Day (3/12), Ear Muff Day (3/13), National Pi Day (3/14), Ides of March (Beware) (3/15), Everything you do is right day (3/16), St. Paddy's Day (3/17)

Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

